

What is claimed is:

1. A resin/graphite laminate comprising multiple sheets of resin impregnated flexible graphite pressure cured at an elevated temperature.

2. The laminate of claim 1 wherein the resin is an epoxy.

3. The laminate of claim 1 wherein the sheets of resin impregnated graphite are glued together with a phenolic-based adhesive prior to being pressure cured at an elevated temperature.

4. The laminate of claim 1 wherein the multiple sheets are pressure cured at a temperature of from 90°C to 200°C and at a pressure of from 1000 psi to 5000 psi.

5. The laminate of claim 1 wherein the density of the cured laminate is greater than about 1.85 g/cm³.

6. A resin/graphite laminate comprising layers of resin impregnated flexible graphite sheets together with layers of a non-graphite material, wherein the laminate is pressure cured at an elevated temperature.

7. The laminate of claim 6 wherein the resin is epoxy.

8. The laminate of claim 6 wherein the non-graphite material is selected from the group consisting of copper, aluminum and plastics.

9. The laminate of claim 6 wherein the laminate is pressure cured at a temperature of below about 200°C and at a pressure of below about 5000 psi.

10. An electronic thermal management device comprising a lamellar structure comprising sheets of resin impregnated flexible graphite pressure cured at an elevated temperature.

11. The device of claim 10 wherein the lamellar structure is pressure cured at a temperature of from 90°C to 200°C and at a pressure of from 1000 to 5000 psi.

12. The device of claim 10, wherein the device exhibits a thermal conductivity which is anisotropic in nature and is greater than 100 W/mC in at least one plane.

13. The device of claim 12 wherein the anisotropic thermal conductivity varies by a factor of at least 15 as between a plane with a higher thermal conductivity and a plane with lower thermal conductivity.

14. The device of claim 10 wherein the pressure cured lamellar structure has a density greater than about 1.85 g/cm³.

15. The electronic thermal management device of claim 10 wherein the sheets of flexible graphite have a resin content of at least about 3% by weight.

16. The electronic thermal management device of claim 10 wherein the sheets of flexible graphite have a resin content of from about 5% to about 35% by weight.

17. An anisotropic electronic thermal management device having a thermal conductivity of greater than about 300 W/mC in an in plane direction and a thermal conductivity of less than about 10 W/mC in an out of plane direction and comprising resin impregnated sheets of flexible graphite.

18. The electronic thermal management device of claim 17 wherein the resin is epoxy.
19. The electronic thermal management device of claim 17 wherein the resin impregnated sheets form a lamellar structure having a density of at least 1.85 g/cm^3 .
20. The electronic thermal management device of claim 17 wherein the resin impregnated sheets of flexible graphite have been cured at an elevated temperature and pressure to form a lamellar structure.

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